

WHAT IS CLAIMED IS:

1. An audio recorder-player, comprising:

means for tuning to at least two audio sources to thereby generate first and second audio

5 signals;

means for generating first and second audio signal characteristics responsive to the first and second audio signals;

means for storing both the first and second audio signals and the first and second audio signal characteristics; and

10 means for reproducing one of the first and second audio signals responsive to selection of one of the first and second audio signal characteristics.

2. The audio recorder-player as recited in claim 1, wherein the audio recorder-player is included in a radio.

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3. The audio recorder-player as recited in claim 1, wherein the audio recorder-player is included in a computer.

20 4. The audio recorder-player as recited in claim 1, wherein the audio recorder-player is included in a set-top box.

5. The audio recorder-player as recited in claim 1, wherein the storing means comprises a hard disk.

25 6. The audio recorder-player as recited in claim 1, wherein the tuning means comprises software routines instantiated by a processor.

7. The audio recorder-player as recited in claim 1, wherein the generating means comprises a voice recognition routine instantiated by a processor.

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8. The audio recorder-player as recited in claim 1, further comprising:

means for applying a control signal generated in response to a spoken command to thereby control the reproducing means.

9. An audio recorder-player, comprising:

means for tuning to at least two audio sources to thereby generate first and second audio
5 signals;

means for generating N audio signal characteristics including silence, single speaker speech, music, environmental noise, multiple speakers' speech, simultaneous speech and music, and speech and noise for both the first and second audio signals;

10 means for storing both the first and second audio signals and the first and second audio signal characteristics; and

means for reproducing one of the first and second audio signals responsive to selection of one of the N audio signal characteristics.

15 10. An audio recorder-player, comprising:

M tuners that generate N audio signals transmitted by N audio sources;

an analyzer that extracts R x N audio signal characteristics from the N audio signals;

a memory that stores the R x N audio signal characteristics; and

output circuitry that reproduces an audio signal corresponding to one of the N audio signals responsive to selection of at least one of the R x N audio signal characteristics,

20 where R is a positive integer and M and N are positive integers greater than 1.

25 11. The audio recorder-player as recited in claim 10, wherein the memory comprises a hard disk.

12. The audio recorder-player as recited in claim 10, wherein each of the M tuners comprises a software routine instantiated by a processor.

30 13. The audio recorder-player as recited in claim 10, wherein the analyzer comprises a voice recognition routine instantiated by a processor.

14. The audio recorder-player as recited in claim 13, wherein the voice recognition routine generates signals that control the output circuitry in response to a spoken command.

15. An operating method for an audio recorder-player including M tuners, an analyzer, a storage device, and audio output circuitry, comprising:

operating the M tuners to acquire N audio signals from N audio sources;

5 operating the analyzer to characterize the N audio signals and generate R x N audio signal characteristics;

storing both the N audio signals and the R x N audio signal characteristics in the storage device; and

reproducing a selected one of the N audio signals via the audio output circuitry responsive to selection of one of the R x N audio signal characteristics,

10 where R is a positive integer and M and N are positive integers greater than 1.

16. The operating method as recited in claim 15, wherein M is equal to N.

17. The operating method as recited in claim 15, wherein:

15 one of the N audio signals is stored while one of the M tuners is tuned to a respective one of the N audio sources; and

the R x N audio signal characteristics are extracted from the stored N audio signals.

18. The operating method as recited in claim 15, wherein selected ones of the R x N 20 audio signal characteristics correspond to tempo, tone, and energy for music included in the N audio signals.

19. The operating method as recited in claim 15, wherein selected ones of the R x N 25 audio signal characteristics correspond to words extracted from speech included in the N audio signals.

20. The operating method as recited in claim 15, further comprising:

generating a control signal for causing the audio output circuitry to reproduce the selected 30 one of the N audio signals responsive to a user selected one of the R x N audio signal characteristics.

21. An operating method for an audio recorder-player including M tuners, an analyzer, a storage device, and audio output circuitry, comprising:

operating the M tuners to acquire N audio signal segments from N audio sources;
operating the analyzer to characterize the N audio signal segments and generate R x N
audio signal characteristics;
storing the R x N audio signal characteristics in the storage device; and
reproducing audio signals generated by a selected one of the N audio sources via the
audio output circuitry responsive to selection of one of the R x N audio signal characteristics,
where R is a positive integer and M and N are positive integers greater than 1.

22. The operating method as recited in claim 21, wherein M is equal to N.

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23. The operating method as recited in claim 21, wherein:
one of the N audio signal segments are temporarily stored each time one of the M tuners
is tuned to a respective one of the N audio sources; and
the R x N audio signal characteristics are extracted from the temporarily stored N audio
signal segments.

24. The operating method as recited in claim 21, wherein selected ones of the R x N
audio signal characteristics correspond to tempo, tone, and energy for music included in the N
audio signal segments.

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25. The operating method as recited in claim 21, wherein selected ones of the R x N
audio signal characteristics correspond to words extracted from speech included in the N audio
signal segments.

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26. The operating method as recited in claim 21, further comprising:
generating a control signal for causing the audio output circuitry to reproduce the selected
one of the N audio signals responsive to a user selected one of the R x N audio signal
characteristics.

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27. The operating method as recited in claim 21, further comprising:
generating a control signal for causing the audio output circuitry switch between an
output one of the N audio signals and a monitored one of the N audio signals whenever a audio
signal sample indicative of the occurrence of an event of interest to a user.

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28. A memory storing computer readable instructions for causing a processor associated with an audio recorder-player to instantiate at least one of predetermined functions including:
- 5 a music classification function permitting the audio recorder-player to automatically classify music in received audio signals based on audio features,
 - a watchdog function permitting the audio recorder-player to automatically respond to the occurrence of a predetermined audio event,
 - 10 a news review function permitting the audio recorder-player to accumulate and play audio signals corresponding to news of interest to the user of the audio recorder-player,
 - a time shift function permitting the audio recorder-player to record audio signal programs to be played at a later time, and
 - an auto pilot function permitting the audio recorder-player to automatically operate based on an operational preference pattern established by the user.

EPO/ESCAPE/EZCA/DRB